DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027306
Date Inspected: 09-Mar-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name:	See Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG/Tower

Summary of Items Observed:

At the start of the shift this Quality Assurance Lead Inspector (QAI) traveled to the SAS project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) Quality Control (QC) personnel. The observations and inspections were performed as noted below:

A). This Quality Assurance Lead Inspector (QALI) assigned the QA Inspectors to the following, but not limited to the work station(s) listed , to observe the welding and the QC inspection of the following:

Joselito Lizardo-Tower, at the 9 Meter El. (Observed the welding, QC inspection and testing of diaphragm plates and fit-up of the drop-in plates) and OBG W5 (Observation of the welding and QC inspection of the Deck Access Hole, DAH).

Craig Hager- OBG field splices 12W/13W and 13W/14W (Welding and QC inspection of the horizontal stiffeners @ the "A" deck longitudinal stiffeners).

Skyway-No work

NOTE: See QA daily Weld Inspection Reports (WIR) and NDE reports for additional information and details.

Quality Assurance Lead Inspector (QALI) Summary

This QA Lead Inspector (QALI) observed the QA Inspector's Joselito Lizardo and Craig Hager monitor the work

performed by the QC inspectors at random intervals and also observed the QA Inspectors verify the welding parameters, the minimum preheat and the maximum interpass temperatures for compliance with the contract specifications. The QAI's utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. At the conclusion of the shift, this QA Lead Inspector discussed and reviewed the work performed by the QAI's in regards to the various observations and the verifications of the WPS's, consumables, welding parameters, preheat and interpass temperatures. The QAI observations of the QC inspection and verification of the welding parameters performed on this date appeared to comply with the contract specifications and no issues were noted.

OBG-QAI Observations

Deck Access Holes

The QAI observed the Shielded Metal Arc Welding (SMAW) of the Deck Access Hole (DAH) plate identified as Weld Number (WN): 8E-PP70.5-E2. The welding was performed by Salvador Sandoval ID-2202 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110-A, Rev. 1. The WPS was also utilized by the QC inspector Steve Jensen as a reference to monitor the welding and verify the welding parameters which was recorded as 136 amps. Later in the shift, at random intervals, this QAI observed the Complete Joint Penetration (CJP) welding and QC inspection performed during the welding of the "B" face.

The welding of the DAH utilized the 3.2 mm Lincoln electrode to perform the welding in the overhead (4G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the underside. The minimum preheat temperature of 10 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract specifications.

Tower

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the drop-in plates identified as Weld Number (WN) 084-1 and 086-1 located on the north diaphragm plate at the 9 meter elevation. The welding was performed by Wai Kitlai ID-2953 and Jin Pei Wang ID-7299. The welders utilized the WPS ABF-D15-3160-1 Rev. 0. The joint designation appeared to comply with AWS single bevel groove butt T-joint identified as TC-P4-GF. The WPS was also used by the QC inspector Bernie Docena as a reference to monitor welding and to perform the QC inspection for compliance. The welding parameters were verified and noted by the QC inspector as follows: 286 amps, 25.0 volts and a travel speed measured as 330 mm per minute (Kitlai) and 276 amps, 25 volts and a travel speed measured at 300 mm per minute (Wang). The welding was performed in flat (1G) position with the work placed in an approximately horizontal plane and the weld metal shall be deposited from the upper side. The QAI inspector also verified the minimum preheat temperature of 160 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later during the shift the QAI observed, at random intervals, the QC inspector monitoring the in process welding, the surface temperatures and verifying the DCEP welding parameters.

The QAI also observed the Submerged Arc Welding (SAW) process of the diaphragm plate identified as Weld Number (WN): 105. The welding was performed by the welding operators Dan Ieraci ID-3232 and James Zhen ID-6001 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4062-1 Rev. 0. The WPS was also

used by the Quality Control (QC) Inspector, Fred Von Hoff, to monitor the welding and to perform QC inspection for compliance. The QAI observed Mr. Von Hoff verify the welding parameters and were noted as follows: 554 amps, 33 volts and a travel speed measured at 370 mm per minute The calculation of the heat input was also noted as 2.9 kj/mm by the QC inspector. The minimum preheat temperature of 140 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract specifications.

This QALI continued the daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders (OBG, Longitudinal and Transverse "A" Deck Stiffeners, Deck Access Holes and the Tower Shear plates).

Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer